

FCC TEST REPORT(sDOC)

TEST REPORT

AOK Industrial Company Limited

SE SERIES SOLAR STREET LIGHT

Test Model: AOK-60WsE-DC-AP-L5-5770-T3-P

Additional Model No.: Please Refer To Page 9 Model List

Prepared for : AOK Industrial Company Limited
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Shajing Street, Shenzhen City, Guangdong Province,
China

Prepared by : Shenzhen Southern LCS Compliance Testing Laboratory
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Date of receipt of test sample : October 29, 2019
Number of tested samples : 1
Serial number : Prototype
Date of Test : October 29, 2019 ~ November 08, 2019
Date of Report : November 08, 2019



FCC TEST REPORT(sDoC)
FCC 47 CFR PART 15 SUBPART B

Report Reference No. : **LCS191029039BE**

Date Of Issue..... : November 08, 2019

Testing Laboratory Name : **Shenzhen Southern LCS Compliance Testing Laboratory Ltd.**

Address..... : 101-201, No.39 Building, Xialang Industrial Zone, Heshuikou Community, Matian Street, Guangming District, Shenzhen, China

Testing Location/ Procedure : Full application of Harmonised standards
 Partial application of Harmonised standards
 Other standard testing method

Applicant'S Name..... : **AOK Industrial Company Limited**

Address..... : Building 1, Shengzuozhi Technology Industrial Park, Shajing Street, Shenzhen City, Guangdong Province, China

Test Specification

Standard : FCC Part 15, Supart B, Class B(sDoC), ANSI C63.4 -2014

Test Report Form No. : LCSEMC-1.0

TRF Originator..... : Shenzhen Southern LCS Compliance Testing Laboratory Ltd.

Master TRF : Dated 2016-08

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Test Item Description..... : **SE SERIES SOLAR STREET LIGHT**

Trade Mark..... :



Model/ Type Reference..... : AOK-60WsE-DC-AP-L5-5770-T3-P

Ratings : DC12.8V, 60W

Result : **Positive**

Compiled by:

Aimee Yang

Supervised by:

Dm Gu

Approved by:



Aimee Yang/ File administrators

Dm Gu/ Technique principal

Cherry Chen / Manager

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FCC -- TEST REPORT**Test Report No. : LCS191029039BE**November 08, 2019

Date of issue

Type / Model..... : AOK-60WsE-DC-AP-L5-5770-T3-P

EUT..... : SE SERIES SOLAR STREET LIGHT

Applicant..... : AOK Industrial Company Limited

Address..... : Building 1, Shengzuozhi Technology Industrial Park, Shajing Street, Shenzhen City, Guangdong Province, China

Telephone..... : /

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Manufacturer..... : AOK Industrial Company Limited

Address..... : Building 1, Shengzuozhi Technology Industrial Park, Shajing Street, Shenzhen City, Guangdong Province, China

Telephone..... : /

Fax..... : /

Factory..... : AOK Industrial Company Limited

Address..... : Building 1, Shengzuozhi Technology Industrial Park, Shajing Street, Shenzhen City, Guangdong Province, China

Telephone..... : /

Fax..... : /

Test Result according to the standards on page 5: **Positive**

The test report merely corresponds to the test sample.

It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

Revision History

Revision	Issue Date	Revisions	Revised By
00	November 08, 2019	Initial Issue	Cherry Chen

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1. SUMMARY OF STANDARDS AND RESULTS

1.1. Description of Standards and Results

The EUT have been tested according to the applicable standards as referenced below.

EMISSION			
Description of Test Item	Standard	Limits	Results
Conducted disturbance at mains terminals	FCC 47 CFR Part 15 Subpart B	Class B	N/A
Radiated disturbance	FCC 47 CFR Part 15 Subpart B	Class B	PASS

N/A is an abbreviation for Not Applicable.

2. GENERAL INFORMATION

2.1. Description of Device (EUT)

EUT : SE SERIES SOLAR STREET LIGHT

Trade Mark : 
Quality, Honesty, Service and Innovation

Test Model : AOK-60WsE-DC-AP-L5-5770-T3-P

Additional Models : See page 9 model list

Power Supply : See page 9 model list

2.2. Description of Test Facility

Site Description

EMC Lab. : TUV RH Registration Number. is UA 50362241 0001.
UL Registration Number. is 100571-492.
NVLAP Registration Number. is 600112-0.

Test Facilities

Shenzhen Southern LCS Compliance Testing Laboratory Ltd.
101-201, No.39 Building, Xialang Industrial Zone, Heshuikou
Community, Matian Street, Guangming District, Shenzhen,
China

RF Field Strength Susceptibility

Shenzhen Southern LCS Compliance Testing Laboratory Ltd.
101, 201 Building A and 301 Building C, Juji Industrial Park,
Yabianxueziwei, Shajing Street, Baoan District, Shenzhen,
Guangdong, China

2.3. Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. To CISPR 16 – 4 “Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements” and is documented in the LCS quality system acc. To DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

2.4.Measurement Uncertainty

Test Item	Frequency Range	Expanded uncertainty (Ulab)	Expanded uncertainty (Ucisp)
Conducted Emission	(9kHz to 150kHz)	2.63 dB	4.0 dB
	(150kHz to 30MHz)	2.35 dB	3.6 dB
Power disturbance	(30MHz to 300MHz)	2.90dB	4.5 dB
Electromagnetic Radiated Emission (3-loop)	(9kHz to 30MHz)	3.60 dB	N/A
Radiated Emission	(9kHz to 30MHz)	3.68 dB	N/A
Radiated Emission	(30MHz to 1000MHz)	3.48 dB	5.2 dB
Radiated Emission	(above 1000MHz)	3.90 dB	N/A

- (1) Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus.
- (2) The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor of $k=2$, which for a normal distribution corresponds to a coverage probability of approximately 95%.

2.5 Model List

Model	Rating
AOK-10WsE-DC-XX-XX-XXXX-BN-P	AOK-15WsE-DC-XX-XX-XXXX-BN-P
AOK-20WsE-DC-XX-XX-XXXX-BN-P	AOK-25WsE-DC-XX-XX-XXXX-BN-P
AOK-30WsE-DC-XX-XX-XXXX-BN-P	AOK-35WsE-DC-XX-XX-XXXX-BN-P
AOK-40WsE-DC-XX-XX-XXXX-BN-P	AOK-45WsE-DC-XX-XX-XXXX-BN-P
AOK-50WsE-DC-XX-XX-XXXX-BN-P	AOK-55WsE-DC-XX-XX-XXXX-BN-P
AOK-60WsE-DC-XX-XX-XXXX-BN-P	

where first "XX" can be any letter for manufacturer of LED, second "XX" can be SN or 00 for sensor provided or not, last "XXXX" can be any digits for color temperature, "BN" can be any letter or digits for beam angles, "P" can be A B C D E for mounting means.

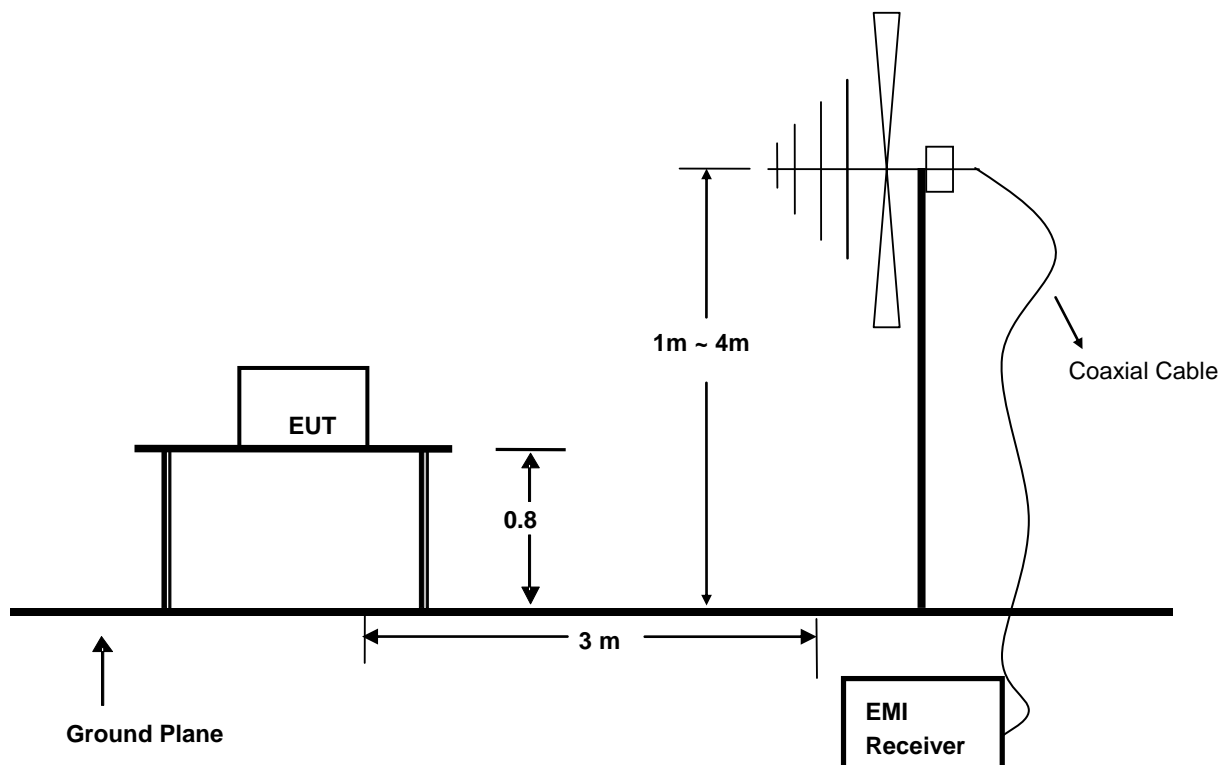
3. RADIATED EMISSION MEASUREMENT

3.1. Test Equipment

The following test equipments are used during the radiated emission measurement:

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Due Date.
1	3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	2021-08-05
2	EMI Test Receiver	R&S	ESCI	101010	2020-06-20
3	Log per Antenna	SCHWARZBECK	VULB9163	5094	2020-06-23
4	EMI Test Software	AUDIX	E3	N/A	2020-06-20
5	Positioning Controller	MF	BK8807-4A-2T	2016-0808-008	2020-06-20

3.2. Block Diagram of Test Setup



3.3. Radiated Emission Limit (Class B)

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		$\mu\text{V}/\text{m}$	$\text{dB}(\mu\text{V})/\text{m}$
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
960 ~ 1000	3	500	54.0

Remark : (1) Emission level $(\text{dB})\mu\text{V} = 20 \log$ Emission level $\mu\text{V}/\text{m}$

(2) The smaller limit shall apply at the cross point between two frequency bands.

(3) Distance is the distance in meters between the measuring instrument, antenna and the

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closest point of any part of the device or system.

3.4.EUT Configuration on Measurement

The following equipment are installed on Radiated Emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

3.5.Operating Condition of EUT

3.5.1.Setup the EUT as shown in Section 3.2.

3.5.2.Let the EUT work in test mode (on) and measure it.

3.6.Test Procedure

EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on a antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated by-log antenna) is used as receiving antenna. Both horizontal and vertical polarization of the antenna is set on measurement. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.4-2014 on radiated emission measurement.

The bandwidth of the EMI test receiver is set at 120kHz.

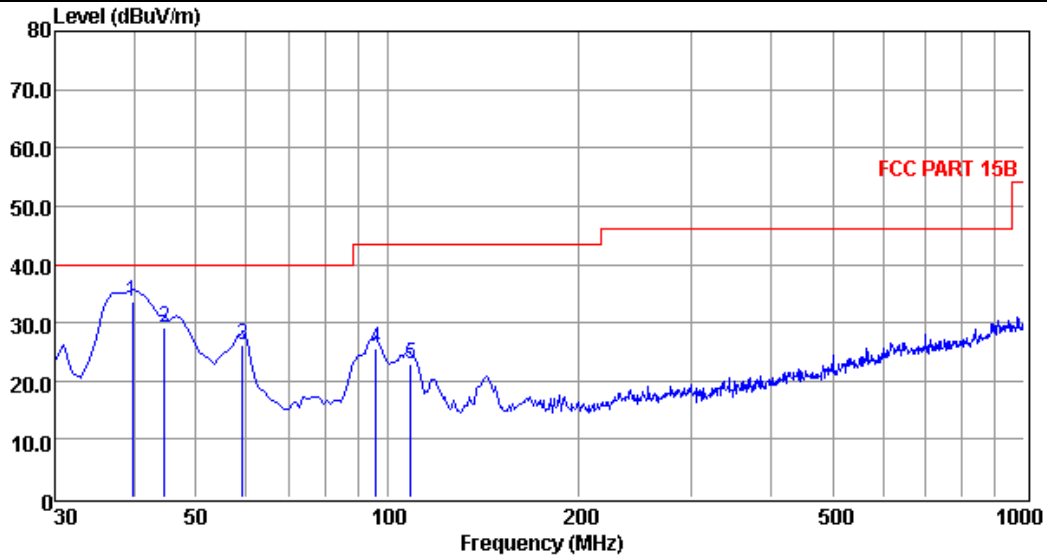
The frequency range from 30MHz to 1000MHz is checked.

3.7.Radiated Emission Noise Measurement Result

PASS.

The scanning waveforms please refer to the next page.

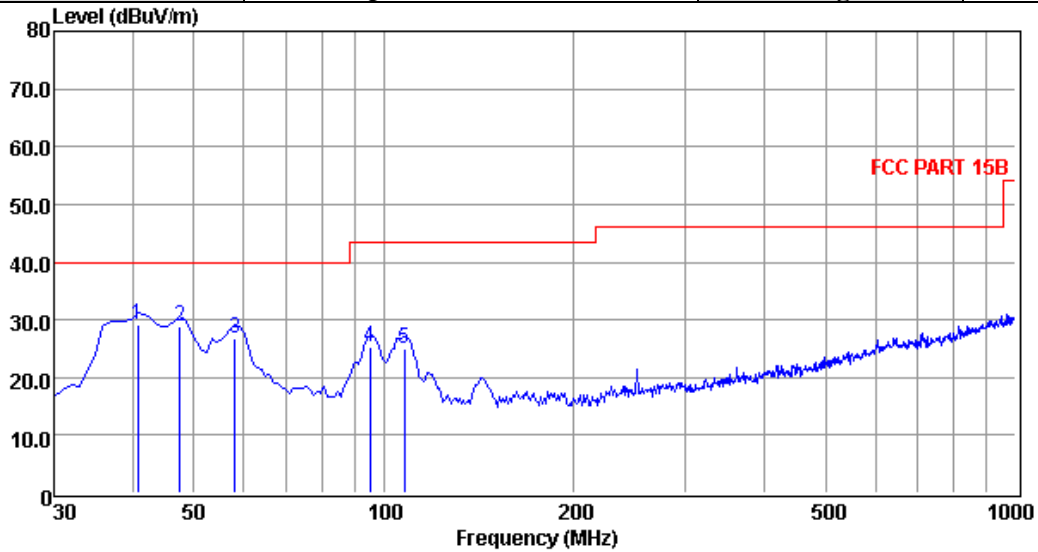
Model No.	AOK-60WsE-DC-AP-L5-5770-T3-P	Test Mode	Lighting
Environmental Conditions	24°C, 56% RH	Detector Function	Quasi-peak
Pol	Vertical	Distance	3m
Test Engineer	Zed Zhang	Test Voltage	DC12.8V



	Freq	Reading	CabLos	Antfac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	
1	39.70	19.68	0.38	13.50	33.56	40.00	-6.44	QP
2	44.55	15.21	0.41	13.55	29.17	40.00	-10.83	QP
3	59.10	12.88	0.49	12.75	26.12	40.00	-13.88	QP
4	95.96	12.14	0.58	12.90	25.62	43.50	-17.88	QP
5	108.57	9.98	0.68	12.38	23.04	43.50	-20.46	QP

- Note: 1. All readings are Quasi-peak values.
 2. Measured= Reading + Antenna Factor + Cable Loss
 3. The emission that are 20db below the official limit are not reported

Model No.	AOK-60WsE-DC-AP-L5-5770-T3-P	Test Mode	Lighting
Environmental Conditions	24°C, 56% RH	Detector Function	Quasi-peak
Pol	Horizontal	Distance	3m
Test Engineer	Zed Zhang	Test Voltage	DC12.8V

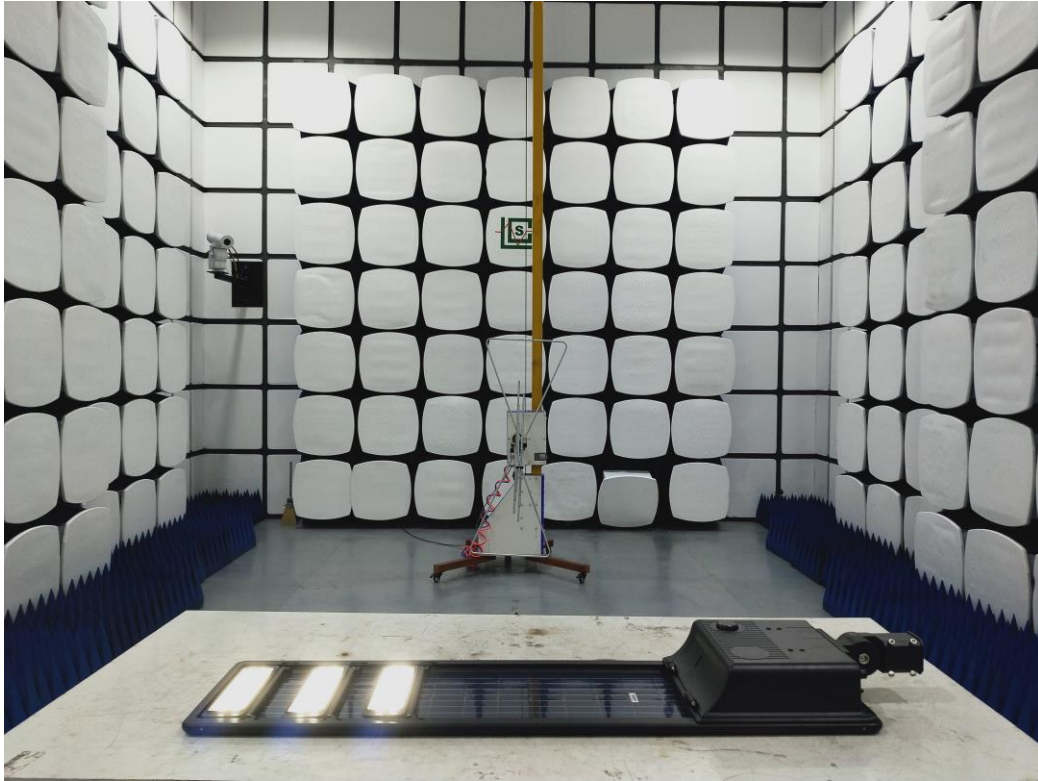


	Freq	Reading	CabLos	Antfac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	
1	40.67	15.05	0.50	13.58	29.13	40.00	-10.87	QP
2	47.46	15.01	0.35	13.40	28.76	40.00	-11.24	QP
3	58.13	13.60	0.47	12.81	26.88	40.00	-13.12	QP
4	94.99	11.91	0.58	12.84	25.33	43.50	-18.17	QP
5	107.60	11.90	0.68	12.47	25.05	43.50	-18.45	QP

Note: 1. All readings are Quasi-peak values.
 2. Measured= Reading + Antenna Factor + Cable Loss
 3. The emission that are 20db below the official limit are not reported

4. PHOTOGRAPH

4.1. Photo of Radiated Measurement



5. EXTERNAL AND INTERNAL PHOTOS OF THE EUT



Fig. 1



Fig. 2



Figure. 3



Figure. 4



Figure.5



Figure.6

----- THE END OF TEST REPORT -----

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